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ABSTRACT

This study provides evidence of sex-typed behavior in the spontaneous play of infants between 9 1/2 and 15 1/2 months. Eight boys and eight girls at 9 1/2, 11 1/2, 13 1/2, and 15 1/2 months were observed during 15 minutes of free play with a variety of realistic toys equally divided into male, female, and neutral categories. Stereotypical, relational, and functional play and number of different uses were defined a pricri and recorded in 10-second blocks. Significant main effects for age were found for the four classes of play. While total active play remained stable, the four classes of play differed with age. Stereotypical play (85% at 9 1/2 months was replaced by relational play (39%) as the dominant behavior at 13 1/2 months. Functional play, rare at 9 1/2 months, increased to 52% at 15 1/2 months. The number of different appropriate uses increased linearly with age. Significant category x sex interactions were found for stereotypical and functional play. Boys played more with male than female toys. Girls played more with female than male toys. Significant differences in sex related stereotypical play, absent at 9 1/2 months appeared reliably at 11 1/2 months. Significant differences in sex related functional play, absent at 11 1/2 months, appeared reliably at 13 1/2 months. The results indicate that sex type behavior occurs between 9 1/2 and 15 1/2 months and suggest that this phenomenon emerges during this 6-month period. (Author/RH)

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Sex Typed Differences in the Spontaneous Play Behavior of Infants 9½ to 15½ Months of Age

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The literature dealing with gender identity and sex typed behavior in young children has been characterized as contradictory (Fagot, 1978; Kuhn, 1978). The problem reflects conflicting theories of early development and the relative absence of studies concerned with the ontogeny of sex-typed behavior (Goldberg & Lewis, 1969). The present study offers substantive evidence that sex-typed behavior is demonstrable in the spontaneous play of infants between 9½ and 15½ months of age. In addition, the results imply that gender identity, as manifested in spontaneous play, may emerge towards the end of the first and the beginning of the second year of life.

Method

Subjects and Materials.

Sixty-four infants, eight boys and eight girls at each of four ages, 9½, 11½, 13½, and 15½ months were observed during 15 minutes of free play. All subjects could crawl or walk. Sex and age were the principal variables in the design with three, five minute trial blocks as a repeated measure. Six sets of toys divided evenly into male, female, and neutral categories were also included as a repeated measure. Each child had free access to the same sample of play things which consisted of 28 individual items. The female category included a large baby doll with cap, dress, socks, shoes, hair brush and bottle; and a small unisex doll with table, chair and bed. The male category was comprised of a plastic dump truck, two blocks, a garage; and a rubber baseball, plastic bat, glove and hat. The neutral category included a tea set with pot, cover, two cups, saucers and spoons and a toy telephone.

Measures.

Three distinct classes of active play were defined a priori and recorded on a check-list for 10 second periods over the 15 minute session. Stereotypical play consisted of mouthing, fingering, waving and/or banging a toy. Relational play consisted of the

simultaneous association of two or more objects in a non-functional manner. The child's use of a toy in an adult defined manner was scored as Functional play and represented the occurrence of one or more of 36 previously determined object-specific, functionally appropriate uses of this sample of toys. For example, stirring a spoon in a tea cup, babbling into the toy telephone, brushing the doll's hair were scored as instances of functional play. The number of different functional acts displayed by each child was also recorded.

Procedure.

The play sessions took place in a carpeted, 3.65 X 5.48 meter room, wired for sound and equipped with a one way observation mirror. Each toy had a specific location along a semi-circle 1.42 meters in front of mother's chair. The arrangement was such that each half of the semi-circle contained a male, female, and neutral category of toy. Placing the child near the toys, mother said, "Go play with the toys". She then returned to her chair and refrained from initiating interaction, but responded naturally to her child's overtures.

Results and Discussion

Separate analyses of the play variables revealed that while the total amount of active play remained stable, the relative percentages of the different classes of active play changed dramatically over this six month period.

Insert Slide 1 here

Stereotypical play, (85%) at 9½ months decreased linearly over this six month interval. Relational play followed a curvilinear pattern and was the dominant behavior (39%) at 13½ months. Functional play, rare at 9½ months increased linearly to 52% at 15½ months. The number of different functional acts followed a pattern similar to that for functional play. The mean of .32 different functional acts at 9½ months, increased linearly to 10.38 different functional acts at 15½ months.

Both boys and girls showed similar patterns of change in the quality and complexity of their play behavior over this six month interval. However, significant differences

were observed in the behaviors of boys and girls and in their selection and use of female, male, and neutral categories of toys.

Insert Slide 2 here

There was a progressive decrease in total play for boys during the course of the session and for girls, between the second and third five minute trial blocks. The difference in total play between boys and girls during the first trial block is related in part to the finding that girls spent more time proximal to mother during the first five minutes of the session. Proximity to mother increased linearly for both boys and girls over the three, five minute trial blocks, however, girls showed more total time proximal to mother than boys.

Analyses of Functional Play showed a significant Time X Sex interaction. During the first five minute trial block, functional play accounted for 13.4% of total active play for boys and 13.2% for girls. During the second trial block, the percentage figures were 7% for boys and 14.5% for girls while in the third trial block the figures were 6% for boys and 12.3% for girls. If functional play represents a more sophisticated use of toys, then the quality of boys play behavior became less mature during the second and third trial blocks, while that for girls remained relatively stable.

Analyses of the different play measures revealed significant category by sex interactions for stereotypical and functional play as well as the number of different functional acts. Since relational play by definition involved the simultaneous use of two or more objects in a non-functional manner it frequently crossed gender categories thus precluding analysis of sex typed behavior.

Insert Slide 3 here

The significant category by sex interaction for stereotypical play showed that boys and girls displayed similar amounts of waving, mouthing, fingering and banging of the neutral category of toys, however, girls demonstrated more of this class of play with female category of toys and less with male category, while boys showed more stereo-

typical play with male category of toys and less with female category. Similar significant sex typed differences in the use of male and female toys were found for mean number of 10 second units of functional play as well as mean number of different functional acts. Thus, when given free access to a variety of toys, previously categorized as male, female or neutral, the spontaneous play of boys revealed more time spent with the male category of toys than with the female category, while opposite results were found for the spontaneous play behavior of girls.

The possibility that the interval between 9½ and 15½ months encompassed the emergence of sex typed play behavior was explored by eliminating the neutral category of toys and analyzing the different classes of active play with male and female toys at each age.

Significant category by sex interactions were found for stereotypical play at 11½ and 13½ months; for functional play at 13½ months; and for number of different functional acts at 13½ and 15½ months. There were no significant category by sex interactions for any of the play measures at 9½ months.

The results of this study have methodological and theoretical implications. Inferences based on observations of spontaneous play in infants and young children should reflect those differences in the amount and quality of play behavior that appear to be influenced by the age and sex of the child, by the duration of the play session, and by the nature of the toys that are available to the child. Spontaneous play is a complex phenomenon that offers the investigator a glimpse of the extent and richness of the infant's expanding cognitive world. When used in this way, observations of play behavior require the imposition of appropriate controls and the provision of a sufficiently representative sample of toys to allow children to demonstrate their knowledge of themselves and of other objects in the world in which they are living.

The finding that sex related differences in spontaneous play were absent at 9½ months yet demonstrable in the play behavior of 11½, 13½, and 15½ month old infants implies that this particular manifestation of gender identity may emerge towards the end of the first and beginning of the second year of life. It is of interest to note that several

studies have identified what appear to be transitions in cognitive development during the first and second years (Kagan, 1971; McCall, et. al., 1977; Mounoud & Bower, 1974; Kearsley & Zelazo, 1977). It has been postulated that the capacity to activate specific ideas about specific objects in the environment becomes demonstrable towards the end of the first and the beginning of the second year (Zelazo, 1975). One of the objects in the child's environment is the child. Thus, it is possible that the sex related differences observed in the spontaneous play behavior of infants between 11½ and 15½ months are one of several overt manifestations of a transition in cognitive development.

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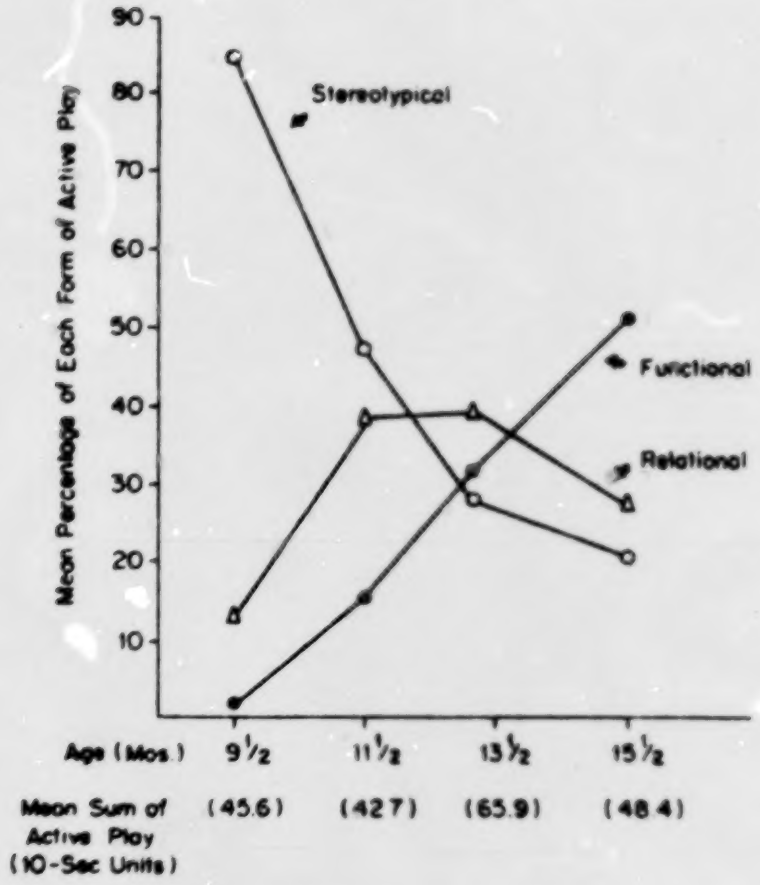
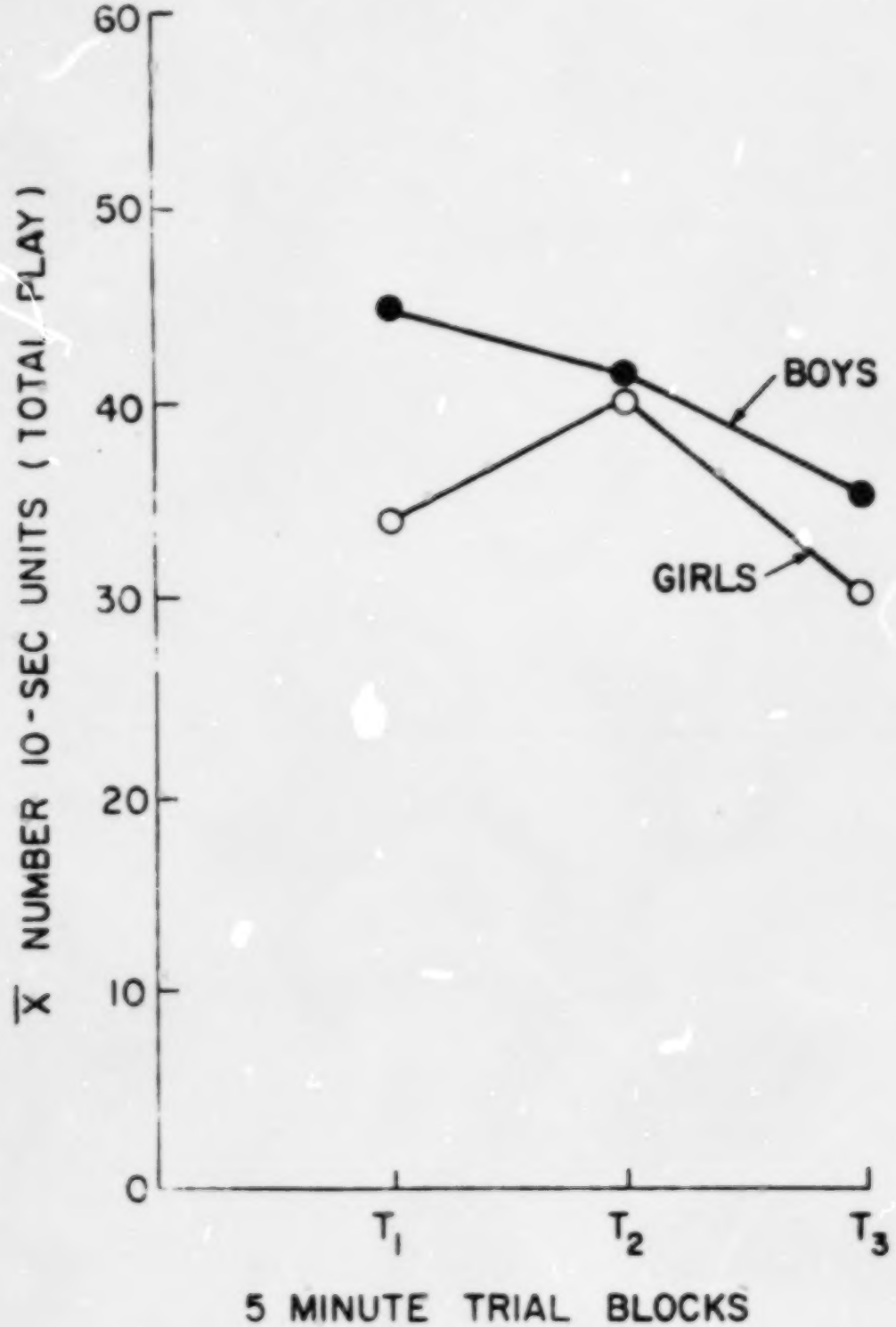
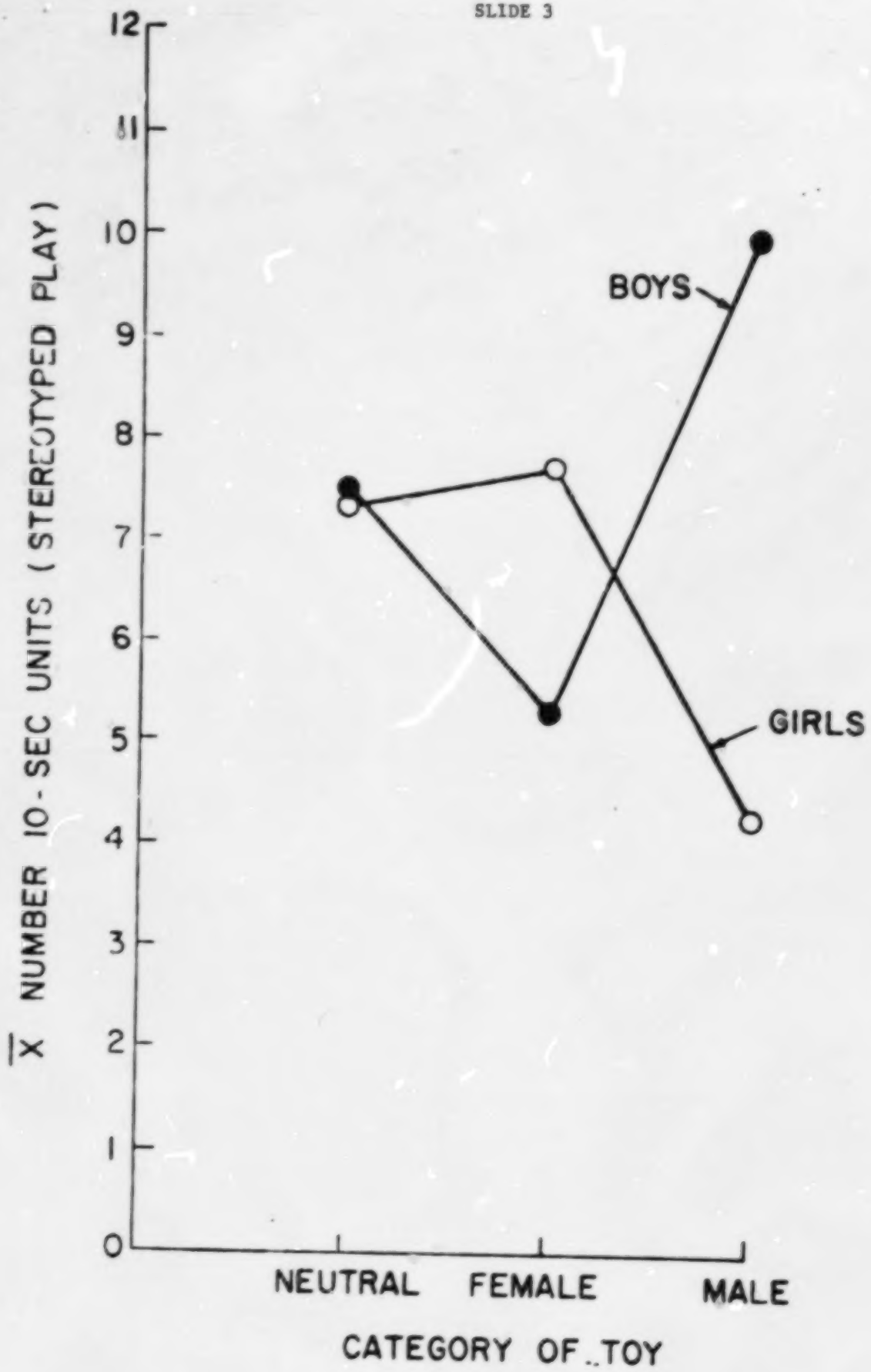
SLIDE 1


Mean Percentage of Each Form of Active Play
90
80
70
60
50
40
30
20
10
Stereotypical
Functional
Relational
Age (Mos.)
9½
11½
13½
15½
Mean Sum of Active Play (10-Sec Units)
(45.6)
(42.7)
(65.9)
(48.4)

SLIDE 2


60
50
40
30
20
10
0
$\overline{X}$ NUMBER 10-SEC UNITS (TOTAL PLAY)
BOYS
GIRLS
T_1
T_2
T_3
5 MINUTE TRIAL BLOCKS

SLIDE 3


12
11
10
9
8
7
6
5
4
3
2
1
0
$\overline{X}$ NUMBER 10-SEC UNITS (STEREOTYPED PLAY)
BOYS
GIRLS
NEUTRAL
FEMALE
MALE
CATEGORY OF TOY

SIGNIFICANT MAIN EFFECTS AND INTERACTIONS ($P < .05$)

	F	DF	P
STEREOTYPICAL PLAY			
AGE	7.965	3,56	$< .000$
CATEGORY X SEX	3.354	2,112	$< .038$
FUNCTIONAL PLAY			
AGE	15.433	3,56	$< .000$
TIME X SEX	4.899	2,112	$< .009$
CATEGORY X SEX	3.339	3,112	$< .039$
NUMBER OF DIFFERENT FUNCTIONAL ACTS			
AGE	37.637	3,56	$< .000$
CATEGORY X SEX	3.339	2,112	$< .039$
RELATIONAL PLAY			
AGE	4,746	6,112	$< .005$

CATEGORY X SEX (MALE, FEMALE TOYS ONLY)

	AGE	F	DF	P
STEREOTYPICAL PLAY	11½	10.31	1	$< .006$
	13½	7.73	1	$< .015$
FUNCTIONAL PLAY	13½	5.73	1	$< .031$
DIFFERENT FUNCTIONAL ACTS	13½	5.80	1	$< .03$
	15½	4.26	1	$< .058$

SIGNIFICANT T TESTS

PROXIMAL MOTHER (T_1) — $F = 2.21$, df 62, p. $< .01$

PROXIMAL MOTHER ($T_1+T_2+T_3$) — $F = 2.22$, df 62, p. $< .05$

COMPOSITION OF SUBJECTS (ORDINAL POSITION)

	Only Child	1st of 2	2nd of 2	3rd of 3	4th of 4
NUMBER OF CHILDREN	40	3	14	6	1